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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/559,832

12/06/2005

Fabrice Stassin

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JACOBSON HOLMAN PLLC  
400 SEVENTH STREET N.W.  
SUITE 600  
WASHINGTON, DC 20004

EXAMINER

WINKLER, MELISSA A

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

04/15/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/559,832	<b>Applicant(s)</b> STASSIN ET AL.	
	<b>Examiner</b> MELISSA WINKLER	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

**Claims 1, 2, and 4 – 10** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The original disclosure as filed does not contain support for a process consisting only of the step recited in Claim 1.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1, 2, and 4 – 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11080037 to Ishii et al. in view of US 2,761,835 to Brown. Citations for Ishii et al. are from the English-language abstract provided by Derwent.

**Regarding Claims 1, 2, and 4 - 9.** Ishii et al. teach a process of modifying an inorganic laminar compound by bringing it into contact with an “organic guest molecule” in the presence of supercritical carbon dioxide (“Problem to Be Solved”). The compounds and carbon dioxide are kept under a pressure of in the range of 10 – 20 MPa (100 – 200 bars) and a temperature in the range of 30 - 50°C. The inorganic guest molecule is uniformly absorbed in the voids of the laminar compound (Solution”), i.e. it is intercalated into the inorganic laminar compound. The inorganic laminar compound is preferably montmorillonite (Solution”).

Ishii et al. does not expressly teach the organic guest molecule/intercalating agent to be one of the claimed compounds. However, Brown also teaches a method of intercalating/modifying montmorillonite with substituted ammonium ions from a salt such as tetraethylammonium chloride (Column 2, Lines 33 –38; Column 3, Lines 58 – 61; Column 4, Lines 20 – 21, 35 – 36, and 52 - 53). Ishii et al. and Brown are analogous art as they are from the same field of endeavor, namely processes for modifying montmorillonite and other similar compounds. At the time of invention, it would have been obvious to a person of ordinary skill in the art to use tetraethylammonium

chloride as the organomodifier in the process taught by Ishii et al. The motivation would have been that tetraethylammonium chloride provides advantages such as improved mechanical strength and increased resistance to chemical attack to the clays it modifies (Brown, Column 3, Lines 58 – 62).

**Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11080037 to Ishii et al. in view of US 2,761,835 to Brown, as applied to Claim 1 above, and further in view of US 5,654,347 to Khemani et al.

**Regarding Claim 10.** Ishii et al. teach the process of Claim 1 but do not expressly teach the modified clay produced is incorporated into a polyester foam with a regular, fine, and closed cell structure. However, Khemani et al. teach a polyester foam whose properties may be modified with the addition of clay (Column 4, Lines 30 – 33). Polyesters contain potentially hydrolysable ester bonds that give them biodegradability. The final polyester foam product has a well formed cell structure where all cells are closed cells with a diameter between 200 – 400  $\mu\text{m}$  (Column 7, Line 60 – Column 8, Line 3). Ishii et al. and Khemani et al. are analogous art as they are from the same field of endeavor, namely compositions containing clay. At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the modified clay taught by Ishii et al. into a polyester foam with the cell structure taught by

Khemani et al. The motivation would have been that the incorporation of clay into foam would enhance the properties, such as thermal stability and mechanical strength, in the final foam product and that modified clay has enhanced miscibility with polymers compared to unmodified clays.

### *Response to Arguments*

Applicant's arguments with respect to Claims 1, 2, and 4 – 10 have been considered but are moot in view of the new ground(s) of rejection.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and

any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### *Correspondence*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELISSA WINKLER whose telephone number is (571)270-3305. The examiner can normally be reached on Monday - Friday 7:30AM - 5PM E.S.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571)272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/James J. Seidleck/  
Supervisory Patent Examiner, Art Unit 1796

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April 9, 2009